

Claims

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A latching mechanism for coupling two nestable shanks in a selected extension therebetween, each shank having at least one aperture along a longitudinal extent thereof, said latching mechanism comprising:

a housing;

an aperture in said housing;

a locking pin for extension through said apertures, said pin having first and second ends;

a pivot arm within said housing having first and second ends, said pivot arm first end being pivotable about an axis within said housing with said pivot arm second end attached to said locking pin;

first means for biasing said pivot arm to urge said locking pin second end towards a position within said housing;

a lever arm for bearing against said first end of said locking pin;

second means for biasing said lever arm to a first position bearing against said first end of said locking pin to urge said second end of said locking pin in extension outside said housing, said lever arm presenting a first end for user manipulation, a manipulation of said first end urging said lever arm away from said first position to allow said first bias means to urge said locking pin second end within said housing;

said latching mechanism adapted for placement along the first shank with an aperture of the respective nested shanks aligned therebetween, wherein said latching

mechanism joins the first and second shanks upon said movement of said locking pin second end in extension outside said housing and through the aligned apertures of the first and second shanks, the first and second nested shanks releasable upon movement of the locking pin second end towards said position within said housing and without the aligned shank apertures.

2. The latching mechanism as claimed in claim 1 wherein said first bias means comprises a spring within said housing, a movement of said spring to a normal position biases said pivot arm to said position wherein said second end of said locking pin is urged towards said position within said housing.

3. The latching means as claimed in claim 1 wherein said second bias means comprises a spring within said housing, a movement of said second spring towards a normal position urging said lever arm into said first position bearing against said first end of said locking pin.

4. The latching means as claimed in claim 2 wherein said second bias means comprises a second spring within said housing, a movement of said second spring towards a normal position urging said lever arm into said first position bearing against said first end of said locking pin.

5. The latching means as claimed in claim 4 wherein said bias of said second bias means is greater than said first bias means on said locking pin, whereby to urge said second end of said locking pin outside said housing.

6. The latching means as claimed in claim 1 wherein said lever arm includes a sloped surface for said bearing against said first end of said locking pin, a relative position of said sloped surface against said first locking pin end corresponding to a relative degree of said bearing of said lever arm against said locking pin first end.

7. The latching means as claimed in claim 6 wherein said second bias means urges said sloped surface of said lever arm against said locking pin first end at a relationship to urge said locking pin second end into a maximum displacement outside said housing.

8. The latching mechanism as claimed in claim 1 wherein said locking pin further includes a plate at said locking pin first end, said lever arm including a surface for bearing against said plate, said second bias means urging said lever arm surface against said plate, whereby to urge said second end of said locking pin outside said housing.

9. The latching mechanism as claimed in claim 8 wherein said housing includes a wall displaced from said plate to present a slot therebetween with said second bias means urging said lever arm in movement within said slot.

10. A latching mechanism for coupling two nestable shanks in a selected extension therebetween, each shank having at least one aperture along a longitudinal extent thereof, said latching mechanism comprising:

a housing;

a locking pin having a free end for extension outside said housing;

first means for biasing said free end of said locking pin towards a first normal locking position outside said housing;

second means for biasing said free end of said locking pin towards a second release position within said housing;

said first bias means selectably operable by a user in a manner to remove said bias of said first bias means on said locking pin, whereby said second bias means urges said locking pin free end towards said second position within said housing, a placement of said latching mechanism along the first shank with the second shank nested therein joining the first and second shanks upon said movement of said locking pin to said first normal locking position and in extension through aligned apertures of the first and second shanks, a user operation of said first bias means moving said locking pin to said second release position and outside the aligned apertures for releasing said joined shanks.

11. The latching mechanism as claimed in claim 10 wherein said first bias means comprises:

a first spring;

an arm associated with said spring, said spring urging said arm against said locking pin in a manner to move said free end of said locking pin to said first normal locking position.

12. The latching mechanism as claimed in claim 11 wherein said second bias means comprises a second spring, said second spring associated with said locking pin in a manner to urge said locking pin towards said second release position.

13. A latching mechanism for coupling two nestable shanks in a selected extension therebetween, each shank having at least one aperture along a longitudinal extent thereof for alignment therebetween, said latching mechanism comprising:

a housing;

a locking pin having a free end for reciprocative extension between a release position within said housing and a locking position without said housing;

first means for biasing said free end of said locking pin towards said release position within said housing;

second bias means for biasing said free end of said locking pin towards said locking position without said housing, said second bias means movable between first and second positions, said first position presenting a bias greater than said first bias means wherein said second bias means urges said free end of said locking pin towards said locking position without said housing, said second position of said second bias means presenting a bias less than said first bias means wherein said first bias means urges said locking pin to said release position within said housing;

said first position of said second bias means urging said locking pin through aligned apertures of the first shank and second nested shanks to join the first and second shanks, said second bias means second position allowing for displacement of the locking pin to a position without the aligned apertures to release the first and second shanks.

14. The latching mechanism as claimed in claim 13 wherein said first bias means comprises a first spring coupled to said locking pin, a movement of said spring towards a normal position urging said locking pin to said release position.

15. The latching mechanism as claimed in claim 14 wherein said second bias means comprises:

means for moving said first spring away from said normal position whereby to move said locking pin to said locking position without said housing; and
means for maintaining said first spring in said position away from said normal position, whereby to maintain said locking pin at said locking position.

16. The latching mechanism as claimed in claim 15 wherein said maintaining means comprises:

a slot in said housing, an end of said locking pin opposite said free locking end presented in said slot;
a wedge for movement in and out of said slot;
said second means biasing said wedge into said slot to a first position into contact with said locking pin opposite end in a manner to urge said spring away from said normal position, whereby to move said locking position to said locking position.

17. The latching mechanism as claimed in claim 16 wherein said bias means comprises a second spring, said second spring at a normal position moving said wedge into said slot to said first position.

18. The latching mechanism as claimed in claim 17 wherein said wedge is movable to a second position out of contact with said locking pin opposite end, said wedge at said second position allowing for said first spring to return to said normal position.

19. The latching means as claimed in claim 14 wherein said second bias means comprises:

a lever arm having first and seconds;

means for pivotally mounting said lever arm to said housing with said second lever arm end against said locking pin;

means for urging said lever arm second end in a direction wherein said locking pin is urged towards said locking position.

20. The latching mechanism as claimed in claim 19 wherein said lever arm is user operable to displace said second end from said locking pin, whereby said first bias means urges said locking pin to said release position.